

Across the year: Seasonal Changes

Overarching Enquiry Question: What changes at different times of the year?

	Disciplinary and Substantive Knowledge	Suggested Vocabulary	Learning Sequence														
Pre-learning	- Know the four seasons are Autumn, Winter, Summer and Spring. - There are different types of weather. - Know how to choose appropriate clothing for different weathers.	Weather Sunny Rainy Windy Snowy Seasons	Autumn 1: Identify the four seasons by observing similarities and differences.														
Learning in this unit	<u>To know that</u> - There are changes across the four seasons that we can observe. (L1, L2, L3, L4, L5) - Seasons have different weathers and varying day length that can be described and observed. (L6) <u>Working Scientifically</u> <u>To know how to</u> <table><tr><td></td><td><u>Asking Questions</u> Ask simple questions about the world. (L6)</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td><u>Observing and Measuring</u> (L1, L2, L6) Observe closely using their senses and simple equipment. Start to identify and classify familiar objects based on simple characteristics</td></tr><tr><td></td><td><u>Recording Data</u> (L4) Gather and record basic data with guidance.</td></tr><tr><td></td><td><u>Interpreting and Communicating Results</u> (L3) Talk about what they have found out and how they found it out</td></tr><tr><td></td><td><u>Evaluating</u>(L5) With scaffolding and prompting, suggest some things that could be changed in an enquiry.</td></tr></table>		<u>Asking Questions</u> Ask simple questions about the world. (L6)						<u>Observing and Measuring</u> (L1, L2, L6) Observe closely using their senses and simple equipment. Start to identify and classify familiar objects based on simple characteristics		<u>Recording Data</u> (L4) Gather and record basic data with guidance.		<u>Interpreting and Communicating Results</u> (L3) Talk about what they have found out and how they found it out		<u>Evaluating</u> (L5) With scaffolding and prompting, suggest some things that could be changed in an enquiry.		Learning <i>There are four seasons: Spring, Summer, Autumn and Winter.</i> <i>Different seasons have different weather – sun, rain, wind, snow, hot, cold</i> <i>We wear different clothes in each season.</i> Activities <i>WS: Notice similarities and differences within the seasons.</i> <i>SE: Identify the four seasons.</i>
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			Autumn	Autumn 2: Predict the colours in Autumn leaves and look for patterns. Learning <i>Leaves start to change colour and fall (deciduous only)</i> <i>Many birds fly south to warmer climates</i> <i>Lots of fruits (apples, plums, berries) are ready to harvest.</i> <i>Some tree seeds fall to the ground- acorns, conkers and beech.</i> <i>Animals with fur start to grow a thicker coat and gather food in preparation for the coming winter.</i> <i>The weather is rainy and windy.</i> Activities <i>WS: Observe the different colours in leaves.</i> <i>SE: Look for patterns with the colours found in different leaves.</i>													
			Winter	Spring 1: Explain what winter feels like and observe winter weather. Learning <i>The weather is cold and sometimes there is snow or ice.</i> <i>Less sunlight</i> <i>The days are shorter and colder</i> <i>Most trees and plants stop growing in the winter</i> <i>Lots of animals go into hibernation.</i> Activities <i>WS: Explain what winter feels like.</i> <i>SE: Observe how snow forms over time.</i>													
	<u>Scientific Enquiry</u> <table><tr><td></td><td><u>Comparative/Fair Testing</u> (L5) Changing one variable to see its effect on another, whilst keeping all others the same.</td></tr><tr><td></td><td></td></tr><tr><td></td><td><u>Observation over time</u> (L3) Observing changes that occur over a period of time ranging from minutes to months.</td></tr><tr><td></td><td><u>Pattern-seeking</u> (L2) Identifying patterns and looking for relationships in enquiries where variables are difficult to control.</td></tr><tr><td></td><td><u>Identifying, grouping and classifying</u> (L1, L4, L6) Making observations to name, sort and organise items.</td></tr></table>		<u>Comparative/Fair Testing</u> (L5) Changing one variable to see its effect on another, whilst keeping all others the same.				<u>Observation over time</u> (L3) Observing changes that occur over a period of time ranging from minutes to months.		<u>Pattern-seeking</u> (L2) Identifying patterns and looking for relationships in enquiries where variables are difficult to control.		<u>Identifying, grouping and classifying</u> (L1, L4, L6) Making observations to name, sort and organise items.						
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			Spring 2: Identify signs of spring and record them as a labelled diagram. Learning <i>The leaves begin to grow on the trees and some trees may blossom (have flowers).</i> <i>The weather starts to get warmer, but it is still windy and rainy.</i> <i>Plants begin to grow.</i> <i>Baby animals like lambs and chicks are born.</i> <i>The days start to get longer.</i> Activities <i>WS: Record different signs of spring using labelled diagrams and pictures.</i> <i>SE: Identify signs of spring.</i>
Book/ Science Capital	Snow Rabbit, Spring Rabbit – Il Sung Na	Spring	
Resources	• Post it notes • Selection of leaves • Spoons, bowls, hot water, cling Film, filter paper, epsom salt, pipettes, food colouring, baking soda, white hair conditioner • Binoculars, magnifying glasses • Bottles, measuring cylinders • UV beads, pipe cleaners • Globe, torch, clear glass, ice, metal dish		
		Summer	Summer 1: Understand that summer weather is usually sunny and test to see where sun rays are greater. Learning <i>Summer is the warmest season where we usually get sunny weather.</i> <i>Trees are in full leaf.</i> <i>The days are very long.</i> <i>The sun can be dangerous.</i> Activities <i>WS: Evaluate my test by suggesting simple improvements.</i> <i>SE: Carry out a comparative test on where sun rays are greater in the school grounds.</i>
		Sunrise Sunset Day length	Summer 2: Ask simple questions and observe what happens to day length in summer. Learning <i>Day length is longer in the season of summer and this means that it is darker later.</i> <i>The amount of light we see during the day changes throughout the year.</i> Activities <i>WS: Ask simple questions about what is going on and make careful observations.</i> <i>SE: Observe how the days are longer in summer.</i>

Overarching Enquiry Questions: What are animals like?

Length of unit - 9 Sessions

	Disciplinary and Substantive Knowledge	Suggested Vocabulary	Learning Sequence																				
Pre-learning	- Know how to keep healthy by doing exercise and eating healthily. - Some rhymes about the body (e.g., Heads, Shoulders, Knees and Toes) - The names of some common animals. - The parts of the human body and how they are associated with each sense.	Body, Head, Arm, Hand, Fingers, Leg, Foot, Toes, Elbow, Knee	Observe and identify different parts of the human body. Learning The human body is made up of lots of different parts. Body, Head, Arm, Hand, Fingers, Leg, Foot, Toes, Elbow, Knee Activities WS: Observe features of the human body. SE: Identify different parts of the human body																				
Learning in this unit	<u>To know that</u> - There are a variety of common animals including fish, amphibians, reptiles, birds and mammals to identify and name. (L5, L6, L7, L8) - There are a variety of common animals that are carnivores, herbivores and omnivores to identify and name. (L9) - The structure of a variety of common animals is different depending on the type of animal (fish, amphibians, reptiles, birds and mammals including pets) (L5, L6, L7, L8) - There are basic parts of the human body to identify, name, draw and label, and say which part of the body is associated with each sense. (L1, L2, L3, L4) <u>Working Scientifically</u> <u>To know how to</u> <table><tr><td></td><td><u>Asking Questions (L8)</u> Ask simple questions about the world.</td></tr><tr><td></td><td><u>Making Predictions (L3)</u> Begin to make predictions based on own ideas</td></tr><tr><td></td><td><u>Setting up tests (L4)</u> Perform simple tests as a whole class.</td></tr><tr><td></td><td><u>Observing and Measuring (L1, L5, L6, L7)</u> Observe closely using their senses and simple equipment. Start to identify and classify familiar objects based on simple characteristics</td></tr><tr><td></td><td><u>Recording Data (L2, L9)</u> Gather and record basic data with guidance.</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> <u>Scientific Enquiry</u> <table><tr><td></td><td><u>Comparative/Fair Testing (L3)</u> Changing one variable to see its effect on another, whilst keeping all others the same.</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>		<u>Asking Questions (L8)</u> Ask simple questions about the world.		<u>Making Predictions (L3)</u> Begin to make predictions based on own ideas		<u>Setting up tests (L4)</u> Perform simple tests as a whole class.		<u>Observing and Measuring (L1, L5, L6, L7)</u> Observe closely using their senses and simple equipment. Start to identify and classify familiar objects based on simple characteristics		<u>Recording Data (L2, L9)</u> Gather and record basic data with guidance.						<u>Comparative/Fair Testing (L3)</u> Changing one variable to see its effect on another, whilst keeping all others the same.					Sense Eye See Ear Hear Hands Touch Nose Smell Mouth Taste Sight, Smell, Sound Taste Touch Sweet Sour Bitter Salty Mammal	Identify when I use my five senses when exploring the outdoor environment and record my findings. Learning Humans have 5 senses. We use different parts of our body for each sense: Eye: See; Mouth: Taste; Ear: Hear; Nose: Smell; Hands: Touch Activities WS: Record my findings from the environment using drawings, writing or symbols. SE: Use my 5 senses when exploring the outdoor environment. Take part in a comparative test about my senses and make predictions about outcomes. Learning We use all of our senses every day to explore the world around us. Our eyes, nose and ears are used to identify sights, smells and sounds. Our sense of sight, smell and sound can help us to react to things and warn us of dangers. Activities WS: Make predictions when using my senses. SE: Carry out a comparative test to test whether our senses are better or worse when we can't see. Identify each taste (sweet, salty, sour and bitter) by carrying out simple tests. Learning Foods can taste bitter, sour, sweet or salty. Our tongue helps us to taste. Activities WS: Carry out simple tests using my senses to compare and classify tastes SE: Identify each taste and categorise them into sweet, salty, sour and bitter. Name and group together common animals that are mammals Learning Mammals are animals that have a backbone, breathe air, and grow hair at some point during their life.
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	 	Identifying, grouping and classifying (L1, L2, L4, L5, L6, L7, L8, L9) Making observations to name, sort and organise items.		Mammals give birth to live young and feed them milk. Mammals are warm blooded animals. Different mammals have different names. Activities WS: Observe the characteristics of animals SE: Classify animals as mammals
Book/ Science Capital	The Tiger Who Came to Tea – Judith Kerr		Bird Reptile Feather Scale	Name and group common animals that are birds and reptiles. Learning Birds and reptiles have a backbone, but birds have feathers and reptiles have scales. Different birds and reptiles have different names. Activities WS: Observe the characteristics of animals SE: Classify animals as birds or reptiles
Resources	• Post it notes • Large paper and pens • Jars or containers to put different smells into (suggestions; chocolate, coffee, coconut, garlic, orange, mint, pepper- this could be bottled or real) • Range of sweet, sour, salty, bitter foods e.g., honey, lemon, sweets, donuts, celery, crisps, smarties, berries.		Fish Amphibians	Name and group common animals that are fish and amphibians. Learning Most fish have scales on their bodies, amphibians do not have scales. Fish are animals that live in water and have gills on the side of their head to help them breathe. Amphibians are animals that are able to live on land and in water. Different fish and amphibians have different names. Activities WS: Observe the characteristics of animals SE: Classify animals as fish or amphibians.
			Structure	Make comparisons between animals by spotting patterns in different animal groups. Learning Animals can be compared and put into groups based on their structure Different animals have different parts to their bodies. The parts of an animal's body is called its structure. An animal can be described based on its structure. Animals can be compared and put into groups based on their structure. Activities WS: Ask questions to classify animals. SE: Classify animals based on their structure.
			Carnivore Omnivore Herbivore	Sort animals by what they eat. Learning Carnivores eat meat. Herbivores eat plants. Omnivores eat both. Activities WS: Use sorting rings and Venn diagrams to record my findings of what animals eat. SE: Identify and sort animals according to what they eat..

Overarching Enquiry Question: What are the things around me made from?

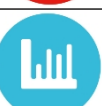
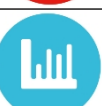
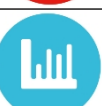
Length of unit - 9 Sessions

	Disciplinary and Substantive Knowledge	Suggested Vocabulary	Learning Sequence														
Pre-learning	- Objects feel and look different based on the material they are made from. - Use different materials when painting and making art.	Wood Metal Plastic Glass Rock Paper	Classify materials based on my observations.														
Learning in this unit	<u>To know that</u> - There is a difference between an object and the material from which it is made. (L2) - There are a variety of everyday materials including wood, plastic, glass, metal, fabric and rock. (L1) - Simple properties of a variety of everyday materials can be described in different ways. (L3, L4, L5, L6, L7, L8, L9) - Everyday materials can be compared and grouped together in a variety of ways of based on their properties. (L3, L4, L5, L6, L7, L8, L9) <u>Working Scientifically</u> <u>To know how to</u> <table><tr><td></td><td><u>Asking Questions (L3)</u> Ask simple questions about the world.</td></tr><tr><td></td><td><u>Making Predictions (L5, L7)</u> Begin to make predictions based on own ideas</td></tr><tr><td></td><td><u>Setting up tests (L4, L8)</u> Perform simple tests as a whole class.</td></tr><tr><td></td><td><u>Observing and Measuring (L1, L9)</u> Observe closely using their senses and simple equipment Start to identify and classify familiar objects based on simple characteristics</td></tr><tr><td></td><td><u>Recording Data (L2)</u> Gather and record basic data with guidance.</td></tr><tr><td></td><td></td></tr><tr><td></td><td><u>Evaluating (L6)</u> With scaffolding and prompting, suggest some things that could be changed in an enquiry.</td></tr></table>		<u>Asking Questions (L3)</u> Ask simple questions about the world.		<u>Making Predictions (L5, L7)</u> Begin to make predictions based on own ideas		<u>Setting up tests (L4, L8)</u> Perform simple tests as a whole class.		<u>Observing and Measuring (L1, L9)</u> Observe closely using their senses and simple equipment Start to identify and classify familiar objects based on simple characteristics		<u>Recording Data (L2)</u> Gather and record basic data with guidance.				<u>Evaluating (L6)</u> With scaffolding and prompting, suggest some things that could be changed in an enquiry.		Learning <i>Some common materials are wood, plastic, glass, paper, metal and rock.</i> Activities WS: Identify and group materials using my observations. SE: Identify materials and classify items.
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	<u>Evaluating (L6)</u> With scaffolding and prompting, suggest some things that could be changed in an enquiry.																
			Identify different materials and record results in a table.														
			Learning <i>Objects around us are made from wood, plastic, glass, paper, metal and rock.</i> Activities WS: Record my results in a table. SE: Identify and classify different materials.														
		Smooth Rough Soft Hard Silky Bumpy	Ask and answers questions to classify materials based on how they feel.														
			Learning <i>Materials feel different. Materials can feel smooth, rough, soft, hard, silky and bumpy</i> Activities WS: Ask and answer questions to group materials. SE: Group and classify materials based on how they feel.														
		Absorbent	Carry out a test to observe how absorbent materials are.														
			Learning <i>Absorbent materials soak up water quickly.</i> Activities WS: Carry out a simple comparative test using my own ideas. SE: Observe how much water is absorbed over time.														
		Transparent	Predict and test the best materials to block out light.														
			Learning <i>You can see through transparent materials.</i> Activities WS: Make predictions based on the best materials to block out light.														

			SE: Carry out a comparative test of which materials block the most light.										
	Scientific Enquiry	Stretchy	Notice patterns in results and suggest improvements to a test.										
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		Activities WS: Evaluate my test and suggest improvements. SE: Notice patterns in my results.											
		Float Sink	Set up a comparable test to test whether different materials float or sink.										
			Learning Some materials float but some materials sink										
			Activities WS: Test different materials to see if they float or sink. SE: Set up a comparable test to see if materials float or sink.										
Book/ Science Capital	Charles Macintosh Tim Peake	Magnetic	Use a sorting diagram to classify materials as magnetic or not magnetic and notice patterns in my results.										
Resources	• Post it notes • Different metals e.g., aluminium, foil, nuts, bolts, screws, coins, wire, paper clips, metal bottle tops, keys. • Different wood- lolly sticks, skewers, cocktail sticks, pegs, twigs, tree bark, wooden spoons, pieces of wood. • Different plastics- bags, cling film, bubble wrap, cutlery. • Different types of paper- writing paper, sugar paper, crepe paper, tissue paper, cardboard, newspaper, tracing paper, paper straws, sticky notes. • Different fabrics- fur, leather, suede, voile, netting, denim and cotton. • Sorting hoops • Sponge and plastic strip, beakers, timer. • Selection of absorbent and non-absorbent materials. • Selection of opaque and transparent materials. • Range of stretch and non-stretchy materials e.g., blutack, plasticine, ruler, stone, elastic band, nylon, lycra.		Learning Some materials are magnetic – they are attracted to a magnet. Some metal objects (but not all!) are magnetic.										
			Activities WS: Use a sorting diagram to classify materials as magnetic or not magnetic. SE: Notice patterns in my results about which materials are magnetic.										

Overarching Enquiry Question: Are all plants the same?

Length of unit - 6 Sessions

	Disciplinary and Substantive Knowledge	Suggested Vocabulary	Learning Sequence																						
Pre-learning	- Plants need sun to grow - Plants need water to grow - Most plants need soil and nutrients to grow - Some plants grow from seeds	Plant Seed Bulb	Identify and compare plants near my school																						
Learning in this unit	To know that - There are a variety of common wild and garden plants, including deciduous and evergreen trees. (L3, L5, L6) - There is a basic structure of a variety of common flowering plants, including trees (L1, L2, L4) Working Scientifically To know how to <table><tr><td></td><td><u>Asking Questions (L6)</u> Ask simple questions about the world.</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td><u>Observing and Measuring (L1, L2, L4)</u> Observe closely using their senses and simple equipment Start to identify and classify familiar objects based on simple characteristics</td></tr><tr><td></td><td><u>Recording Data (L2, L3, L5)</u> Gather and record basic data with guidance.</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> Scientific Enquiry <table><tr><td></td><td></td></tr><tr><td></td><td><u>Research (L4)</u> Using secondary sources of information to answer scientific questions.</td></tr><tr><td></td><td></td></tr><tr><td></td><td><u>Pattern-seeking (L1)</u> Identifying patterns and looking for relationships in enquiries where variables are difficult to control.</td></tr></table>			<u>Asking Questions (L6)</u> Ask simple questions about the world.						<u>Observing and Measuring (L1, L2, L4)</u> Observe closely using their senses and simple equipment Start to identify and classify familiar objects based on simple characteristics		<u>Recording Data (L2, L3, L5)</u> Gather and record basic data with guidance.								<u>Research (L4)</u> Using secondary sources of information to answer scientific questions.				<u>Pattern-seeking (L1)</u> Identifying patterns and looking for relationships in enquiries where variables are difficult to control.	Flower Leaves Stem Roots
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		Garden Wild	Identify, draw and label garden and wild plants found in the environment.																						
		Leaf Tree Branch Trunk	Observe and research the names and types of different trees.																						

		Identifying, grouping and classifying (L2, L3, L4, L6) Making observations to name, sort and organise items.	Evergreen Deciduous	Activities WS: Label the parts of a tree SE: Identify the parts of a tree Learning <i>Deciduous trees lose their leaves in winter.</i> <i>Evergreen trees keep their leaves all year round.</i> Some evergreen trees: pine, fir, spruce Some deciduous trees: oak, sycamore, horse chestnut Activities WS: Observe the leaves of different trees SE: Research the names of different trees using their leaves. Ask questions to classify plants in different ways. Learning <i>Plants have similar features but can look different.</i> Activities WS: Ask simple questions to help classify plants. SE: Classify plants in different ways.
Book/ Science Capital	The Tiny Seed – Eric Carle Jack and the Beanstalk Leaf Man – Lois Elhert			
Resources	• Post it notes • Large paper/pens • Jack and the beanstalk book (optional) • Cotton wool, water, soil, runner bean seeds (other seeds could be used e.g., cress) • Magnifying glasses • Pansy plants • Junk modelling materials • Leaf man book (optional) • Paper towels, waxy paper (greaseproof) • Paperclips			